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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/505,346	07/20/2005	Toshitsugu Kiyosada	1852-044862	5911

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EXAMINER

BERNSHTEYN, MICHAEL

ART UNIT

PAPER NUMBER

1713

DATE MAILED: 12/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/505,346	Applicant(s) KIYOSADA ET AL.	
	Examiner Michael Bernshteyn	Art Unit 1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-28 is/are pending in the application.
- 4a) Of the above claim(s) 12-15, 18-22, 24, 26 and 28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 16, 17, 23, 25 and 27 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 12-28 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>06/13/2005</u> | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

1. Applicant's election with traverse of Group III, claims 16, 17, 23, 25 and 27 in the reply filed on December 9, 2005 is acknowledged. The traversal is on the ground(s) that according to PCT Rule, claims of different categories with common special technical features do not lack novelty. This is not found persuasive because the claimed common special technical feature in all claims is a papermaking chemical containing a (meth)acrylamide polymer, produced by polymerizing at least monomer(a), monomer (b), monomer (c1) and monomer (c2), and this common special technical feature lacks of novelty.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Bergthaller et al. (U. S. Patent 4,334,013).

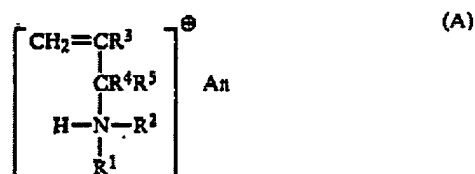
With regard to the limitations of instant claims 16 and 17, Bergthaller discloses copolymers obtained by polymerizing an allyl ammonium salt, a monomer containing at least one anionic group and acrylamide and/or methacrylamide are useful as peptizing agents for silver halide emulsions (abstract).

With regard to the limitations of instant claims 16 and 17, Bergthaller discloses that the invention provides:

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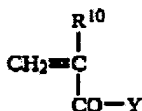
(1) new copolymers characterised by a content of a copolymers of **at least** the following **polymerized compounds**:

(1) an allyl ammonium salt corresponding to the following formula



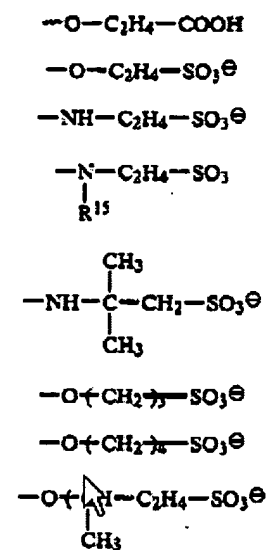
which is analogous to formula (1) of the claim 16. A_n is an anion, particularly the **anion of a strong inorganic or organic acid, particularly chloride**; alkane sulphonate; aryl sulphonate; trifluoroacetate; perfluoroalkanoate; perfluoroalkane sulphonate or the sulphonate group of a monomer present in copolymerised or copolymerisable form;

(2) a monomer B containing at least one anionic group, preferably a monomer corresponding to the following formula:

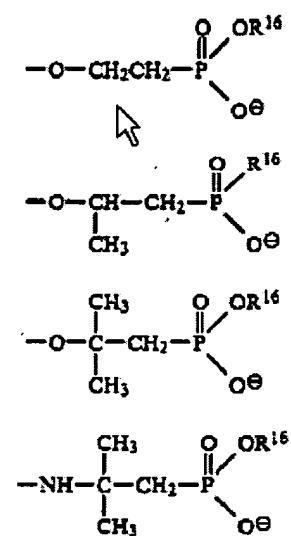


Y represents hydroxyl; an alkoxy or alkylamino radical, particularly one containing from 2 to 8 carbon atoms in the alkyl radical which may be substituted by a solubilising group, more particularly a COOH- , $\text{SO}_3\text{H-}$ or OH- group, especially

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which is corresponding to monomer (c1) of the claim 16; and



which is corresponding to monomer (c2) of the claim 16;

(3) at least 40 mole percent, preferably from 40 to 65 mole percent, of a compound C which is **acrylamide** and/or **methacrylamide**, which is corresponding to monomer (b) of the claim 16 (col. 2, line 34 through col. 4, line 41).

Bergthaller discloses that **polymerized compounds A and B** are present in the following molar ratios, based on the polymer as a whole: compound A: 5 to 30%, preferably 10 to 20%; compound B: 10 to 40%, preferably 15 to 30%. In a particularly preferred embodiment, the copolymer contains from 5 to 25 mole percent, based on the polymer, of **polymerised units** of an alkyl acrylate and/or methacrylate containing from 2 to 8 carbon atoms in the alkyl radical. Butyl acrylate is preferred. The copolymers may additionally contain other **polymerised monomer** fractions, which preferably make up no more than 20 mole percent of the total polymer (col. 4, lines 42-51).

Particularly preferred compounds corresponding to formula A are allyl amine hydrochloride; allyl ammonium methane sulphonate; allyl ammonium trifluoroacetate; allyl ammonium benzene sulphonate; 3-allyl ammonium propane sulphonate; 4-allyl ammonium butane sulphonate; the allyl ammonium salt of 2-acrylamido-2-methyl propane sulphonic acid, etc. (col. 5, lines 35-48). Particularly preferred compounds B are acrylic acid; methacrylic acid; itaconic acid; dimeric acrylic acid; **2-acrylamido-2-methyl propane sulphonic acid**, etc. (col. 5, lines 49-60).

3. Claims 23, 25 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bergthaller in view of Nasu (U. S. Patent 5,756,646).

With regard to the limitations of instant claims 23 and 25, Bergthaller does not disclose that the polymerization is conducted in the presence of a urea compound.

Nasu discloses an agent for improving surface quality of paper comprising an acrylamide resin composition obtained by hydrolyzing an acrylamide resin, which is obtained by **polymerizing an acrylamide monomer in the presence of a urea**

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compound (abstract). The urea compounds include urea, thiourea, ethylene urea, ethylene thiourea, etc. One or more of these can be used in combination. It is especially economically preferable to use urea alone (col. 3, lines 16-19).

Therefore, it would have been obvious to one having ordinary skill in the art then the invention was made to add urea compound as taught by Nasu during the polymerization process of acrylamide resin polymer composition of Bergthaller to achieve excellent effect for improving surface strength, tensile strength and internal strength of paper (US'646, col. 2, lines 37-39), and thus to arrive at the subject matter of claims 23 and 25.

With regard to the papermaking chemical containing a (meth)acrylamide polymer in claim 23 and its use as a paper strength agent instantly claimed in claim 27, Bergthaller is silent about it.

Nasu discloses that the agent for improving surface quality of paper comprising an acrylamide resin composition provides paper with excellent surface strength, tensile strength and internal strength.

Therefore, it would have been obvious to one having ordinary skill in the art then the invention was made to employ Bergthaller' copolymer containing (meth)acrylamide as papermaking chemical such as a paper strength agent as taught by Nasu to improve surface strength, tensile strength and internal strength of paper (US'646, col. 2, lines 37-39), and thus to arrive at the subject matter of claim 27.

Thus, the combination of Bergthaller and Nasu renders all instant claims *prima facie* obvious in absent of unexpected results commensurate in scope of the claims.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Bernshteyn whose telephone number is 571-272-2411. The examiner can normally be reached on M-F 8-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael Bernshteyn
Patent Examiner
Art Unit 1713

MB
12/20/2005


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